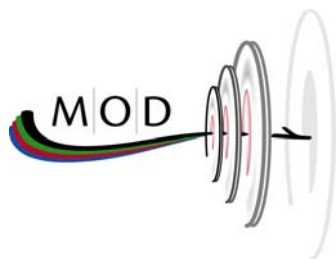


# Geospatial Coordination Report

## Spring 2006

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1.1	June 16, 2006	Geospatial leverage status	J.McCarty

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Appendix A: Geospatial Data Coordination

Appendix B: Geospatial Data Leveraged by FEMA

Appendix C: FEMA Data Collection in U.S. Urban Areas



## 1. Introduction

The Department of Homeland Security's (DHS's) Federal Emergency Management Agency (FEMA) has developed a Geospatial Data Coordination Policy that describes the principles for coordinating, communicating, documenting, and reporting existing and proposed geospatial data collected, produced, or manipulated under FEMA's Map Modernization Program. The purpose is to facilitate data sharing and secondary data use.

The primary goals of this policy are to ensure that the Map Modernization Program will:

1. protect its investments in geospatial data by requiring data to be documented, standard-compliant and easily accessible to the general public when appropriate and release of the data does not pose a security risk,
2. maximize the use of partnerships, including Federal, State and local partners, for the acquisition and production of geospatial data,
3. minimize duplicative requests from Federal agencies to State and local data stewards,
4. recognize the value of existing coordination efforts at the State and local levels, and
5. comply with all Federal requirements for coordination and reporting of geospatial activities.

Through *Circular A-16* the Office of Management and Budget (OMB) directed Federal agencies that produce, maintain, or use spatial data, either directly or indirectly, to participate in the development of the National Spatial Data Infrastructure (NSDI). The goals of the NSDI are to reduce duplication of effort among agencies; improve quality and reduce costs related to geographic information; make geographic data more accessible to the public; increase the benefits of using available data; and establish key partnerships with States, counties, cities, tribal nations, academia and the private sector to increase data availability.

FEMA supports the requirements, guidance and standards provided by the Federal Geographic Data Committee (FGDC) and the e-Government initiative goals of the Geospatial One-Stop (GOS) that implement the NSDI.

## 2. Status Summary

The purpose of this report is to provide FEMA with status of Geospatial Coordination at the Regional level, status of Geospatial leverage, and to provide information on where FEMA, the National Geospatial-Intelligence Agency (NGA), the U.S. Geological Survey (USGS), the Census Bureau and others might have mutually beneficial data sets or planned data collection activities to facilitate data sharing or cost sharing.

### 2.1. Geospatial Coordination Status

A summary of the status of Geospatial Coordination at the Regional level is provided in Table 1. The table shows the current status of six components of geospatial coordination. The six components used as metrics are:

1. **Reported Elevation:** The Regional Management Centers (RMCs) were asked to document where there was terrain data that the Federal Government did not already own for counties with active or planned Digital Flood Insurance Rate Map (DFIRM) projects.
2. **Reported Imagery:** The RMCs were asked to document where there was orthophoto data that the Federal Government did not already own for counties with active or planned DFIRM projects.
3. **National States Geographic Information Council (NSGIC) Coordination:** The RMCs were asked to develop working relationships with the NSGIC representatives in their states to facilitate a coordinated approach to data sharing.
4. **Standard Operating Procedures (SOPs) Updated:** The RMCs were given draft SOPs for working with their state NSGIC representatives. This metric tracks if they have maintained those documents in any way since receiving them.
5. **National Digital Elevation Program (NDEP):** The RMCs were asked to enter metadata records into the NDEP project tracker web site for any State and local elevation data sets that were planned to be used on a FEMA DFIRM project for the 2004 and 2005 DFIRM projects in their Regions.
6. **National Digital Orthophoto Program (NDOP):** The RMCs were asked to enter metadata records into the NDOP project tracker web site for any State and local orthophoto data sets that were planned to be used on a FEMA DFIRM project for the 2004 and 2005 DFIRM projects in their Regions.



## Geospatial Data Coordination

The key for Table 1 indicates what each color in the table represents.

Key	
	Complete or Yes
	Partial
	None or No

RMC/Region	Reported Elevation	Reported Imagery	NSGIC Coordination	SOPs Updated	NDEP	NDOP
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

Table 1. Geospatial Coordination Status

The table indicates some remaining gaps in data reporting, a few gaps with NSGIC coordination, and shows large gaps in metadata development and entry into the NDEP/NDOP project tracker. The gaps in reporting and documentation are largely due to training issues, un-cooperative partners, and limitations of the NDEP/NDOP project tracker. The gaps in coordination reflect the need for continuous communication to the RMCs on the importance of establishing working relationships with the NSGIC representatives. These gaps are further explained in **Appendix A: Geospatial Data Coordination**, and include proposed corrective actions.

The National Service Provider (NSP) headquarters team will continue to work with the RMCs to close these gaps through training/education and by streamlining the reporting process and its integration with the Mapping Information Platform (MIP). The goal is to close all gaps during the next reporting cycle.

### 2.2. Geospatial Data Leverage Status

The leverage of existing geospatial data from locals, States, and other Federal Agencies is an important component to the success of Map Modernization. It is also important for FEMA to report the value of the leveraged data to DHS and OMB to show that FEMA has been successful at taking advantage of existing data sets.

Leverage is reported here in approximate dollar values for terrain data, basemap data, and other geospatial data. **Appendix B** provides the estimated total leverage values for each data category for each FEMA Region. These totals were derived from estimated leverage values reported in the 2005 CTP Leverage Report combined with leverage values for each data category compiled by each Regional Management Center (RMC) for their respective area of responsibility. The basemap category includes vector data as well as reported imagery identified in each region. The estimated value for basemap leverage seems low considering the extensive use of National Digital Orthophoto Program imagery for DFIRM production. The NSP headquarters team will look into this, and correct these numbers for the fall report if appropriate. The 'other geospatial data' category includes data for existing H&H data studies, field surveys, and other project costs covered by the partners.

The leverage values are estimates of the cost FEMA would typically incur to acquire the data through traditional contractor mechanisms. Data acquisition costs that were used to compute leverage values for each data category are based on the October 28, 2002 *Estimating the Value of Partner Contributions to Flood Mapping Projects* (aka "Blue Book") and are adjusted to reflect 2005 costs, and are as follows:

- Topographic Mapping
  - \$315 per square mile for 4' contours
  - \$421 per square mile for 2' contours
  - \$50 per square mile for other elevation data
- Base Map Acquisition
  - \$16 per panel for USGS DOQs with minimum features
  - \$452 per panel for local orthophotos with maximum features

The following three graphs provide a summary of the leverage information collected for Fiscal Year 2005.

### Partner Terrain Data Contributions - vs - FEMA Terrain Data Contributions

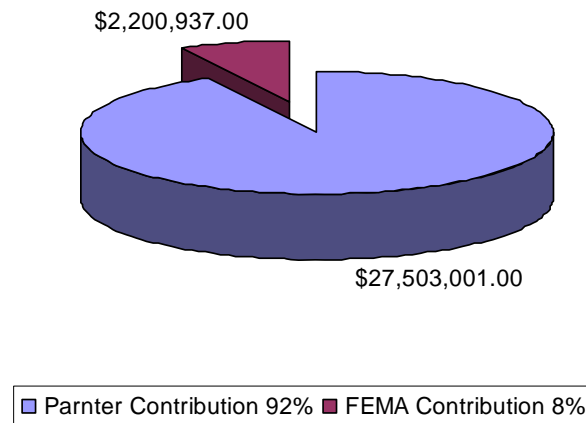


Figure 1. Terrain Data Leverage Comparison

### Partner Basemap Contributions - vs - FEMA Basemap Contributions

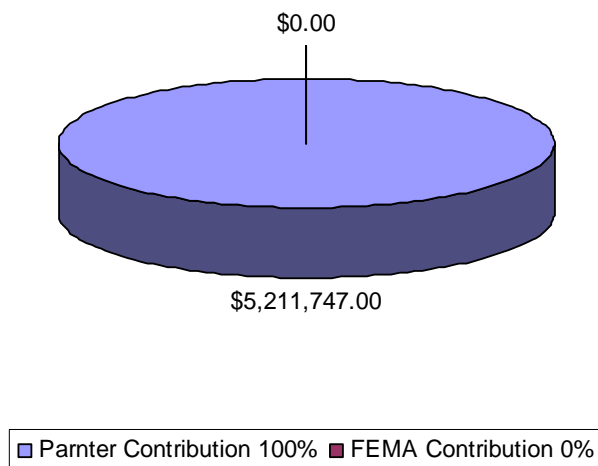


Figure 2. Basemap Data Leverage Comparison

**Total Partner Data Contributions -vs- Total FEMA Data Contributions**

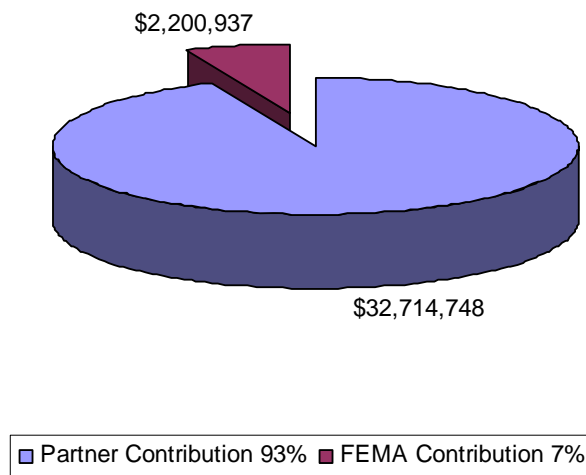


Figure 3. Total Leverage Contribution Comparison

### 2.3. Available Data

Where has FEMA discovered data? Where does FEMA plan to produce DFIRMs in the near future? Where is there data that the USGS can incorporate into the National Elevation Dataset? Where are there basemap datasets that Census could use for TIGER/MAF modernization? Where are there imagery datasets that the National Digital Orthophoto Program partner agencies might be interested in? Where are there elevation data sets that National Digital Elevation Program partner agencies might be interested in? And where do these areas possibly intersect the NGA/USGS 133 Urban Area data development initiative? These are the questions answered in the tables and maps provided in **Appendix C** of this report. Answering these types of questions is intended to lead to opportunities to share data or share data development costs with NGA and the USGS.

FEMA has inventoried over 385 elevation data sets and over 400 basemap datasets that may be of interest to its partners. These data sets will be cataloged on the FEMA Mapping Information Platform (MIP) [www.hazards.fema.gov](http://www.hazards.fema.gov), and are available in Appendix C of this report as well.

The 133 Urban Area initiative at NGA and USGS is an effort to collect high resolution orthophotography of the defined urban areas, and high resolution LIDAR for the same areas. A five mile buffer was established around the defined Urban Areas to capture all potential FEMA projects that might produce data that NGA and the USGS could take advantage of. The intent is to also let FEMA's mapping partners know where the government might have data available that could reduce the amount of terrain and basemap data development for their DFIRM projects. Figure 4 shows by year, the number of FEMA projects that potentially intersect one of the Urban Areas. This clearly illustrates the many potential opportunities for data sharing over the next couple of years.

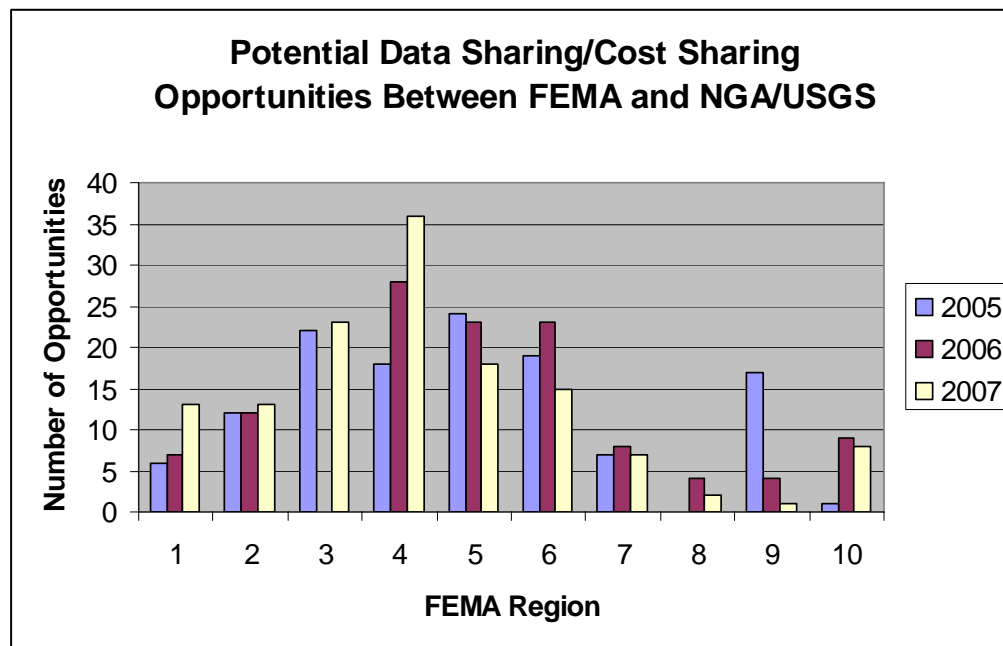


Figure 4. Numbers of Potential Data Sharing Opportunities